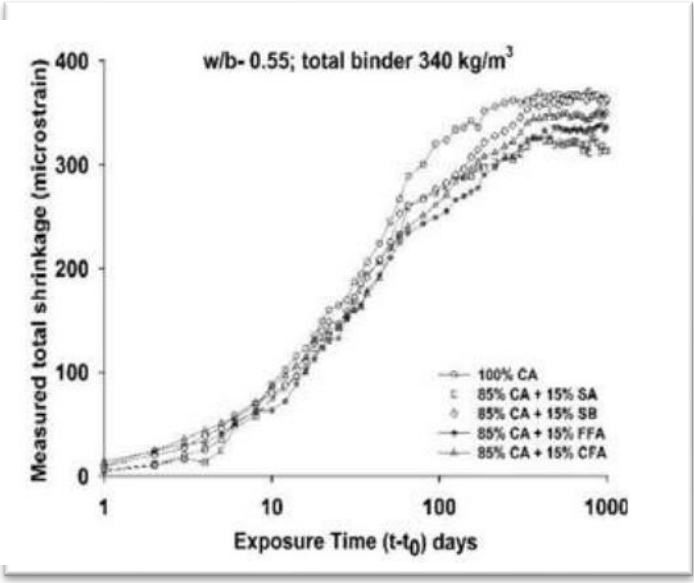
Testing of Time-Dependent Deformation

- Autogenous Shrinkage
- Drying Shrinkage
- Compressive Creep
- Flexural Creep

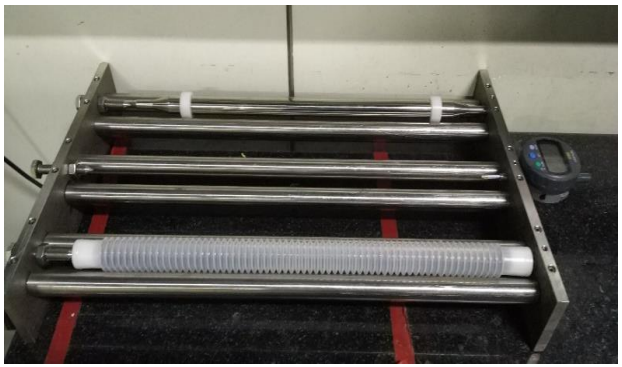
Shrinkage – Autogenous and Drying

Working Principle and Application

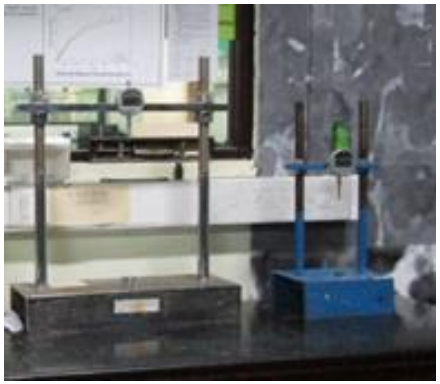
Concrete shrinks due to the change in moisture content and restrained shrinkage leads to cracking. For measuring shrinkage, specimen length is measured with reference to a standard invar bar. The pictures show test set-up for measuring autogenous and drying shrinkage of mortar/concrete specimens.



Shrinkage in binary blend concrete



Corrugated tube for early-age autogenous shrinkage



Rigid frame with digital dial gauge

Concrete cylindrical specimen with studs in place

Creep – Compressive and Flexural

Working Principle and Application

Creep is the time-dependent deformation under sustained load. Long-term deformation due to creep may lead to failure of structures.

The pictures show monitoring of compressive and flexural creep of concrete specimens in BTCM laboratory of IIT Madras.

Compressive creep

Flexural creep